Computer Information Systems

6612 36 weeks

6614 18 weeks

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Acknowledgments

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Office of Career, Technical, and Adult Education
Virginia Department of Education
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Course Description

**Suggested Grade Level:** 9 or 10 or 11 or 12

Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases, multimedia presentations, and integrated software activities. Students work individually and in groups to explore computer concepts, operating systems, networks, telecommunications, emerging technologies, and career opportunities related to the information technology field.

Recommended prerequisite(s): *Keyboarding course(s) or teacher-approved demonstration and documentation of touch keyboarding skills*

**Task Essentials List**

- Tasks/competencies designated by plus icons (➕) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (〇) are optional
- Tasks/competencies designated by minus icons (➖) are omitted
- Tasks marked with an asterisk (*) are sensitive.

<table>
<thead>
<tr>
<th>Task Number</th>
<th>6612</th>
<th>6614</th>
<th>Tasks/Competencies</th>
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<tbody>
<tr>
<td>Exploring Computer Concepts</td>
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<tr>
<td>39</td>
<td>➕</td>
<td>➕</td>
<td>Explain the functions of computer system components.</td>
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<tr>
<td>40</td>
<td>➕</td>
<td>➕</td>
<td>Illustrate the information processing cycle.</td>
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<tr>
<td>41</td>
<td>〇</td>
<td>〇</td>
<td>Trace the development of computing devices and their influence on society.</td>
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<tr>
<td>42</td>
<td>➕</td>
<td>➕</td>
<td>Demonstrate the use of computer input devices.</td>
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<tr>
<td>43</td>
<td>➕</td>
<td>➕</td>
<td>Describe Wi-Fi, Bluetooth, and mobile devices.</td>
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<td>44</td>
<td>➕</td>
<td>➕</td>
<td>Describe computer output devices.</td>
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<tr>
<td>45</td>
<td>➕</td>
<td>➕</td>
<td>Describe auxiliary storage devices.</td>
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<tr>
<td>46</td>
<td>➕</td>
<td>〇</td>
<td>Identify basic networking components.</td>
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<td>Describe how the Internet works.</td>
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<tr>
<td>Exploring Ethical Issues Related to Computers and Computer Systems</td>
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<tr>
<td>48</td>
<td></td>
<td>Identify security issues related to computer hardware, software, and data.</td>
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<tr>
<td>49</td>
<td></td>
<td>Identify concepts related to copyright, public domain, copy protection, intellectual property, and licensing agreements, including, but not limited to, software, media (e.g., music, pictures), and logo requirements.</td>
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<tr>
<td>50</td>
<td></td>
<td>Identify concepts of cybersecurity and cyber forensics, honesty, and confidentiality related to information systems (e.g., spam, malicious software).</td>
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<tr>
<td>51</td>
<td></td>
<td>Identify social networking etiquette.</td>
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<td>52</td>
<td></td>
<td>Investigate security issues related to technology.</td>
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<tr>
<td>53</td>
<td></td>
<td>Investigate Internet privacy issues and computer crimes, including identity theft.</td>
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<tr>
<td>Managing Computer Systems</td>
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<tr>
<td>54</td>
<td></td>
<td>Maintain workstation, equipment, software, and supplies.</td>
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<tr>
<td>55</td>
<td></td>
<td>Identify information needed to purchase or replace computer equipment and peripherals.</td>
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<tr>
<td>56</td>
<td></td>
<td>Obtain assistance via electronic and hard-copy references and documentation.</td>
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<tr>
<td>57</td>
<td></td>
<td>Troubleshoot hardware problems.</td>
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<td>58</td>
<td></td>
<td>Operate components of the user interface.</td>
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<tr>
<td>59</td>
<td></td>
<td>Manage the desktop environment.</td>
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<tr>
<td>60</td>
<td></td>
<td>Manage files and folders/directories.</td>
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<tr>
<td>61</td>
<td></td>
<td>Back up data files.</td>
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<tr>
<td>62</td>
<td></td>
<td>Scan storage devices and equipment for malicious software.</td>
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<tr>
<td>63</td>
<td></td>
<td>Describe the steps to install and remove software.</td>
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<tr>
<td></td>
<td></td>
<td>Operate peripherals.</td>
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<tr>
<td>65</td>
<td></td>
<td>Identify safety precautions and devices associated with computer use.</td>
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</tbody>
</table>

**Producing Word Processing Documents**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Compare features of word processing programs to determine the best tools to use for a given task.</th>
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</thead>
<tbody>
<tr>
<td>66</td>
<td></td>
<td>Compose documents.</td>
</tr>
<tr>
<td>67</td>
<td></td>
<td>Use word processing programs to perform desktop publishing functions.</td>
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<tr>
<td>68</td>
<td></td>
<td>Edit documents.</td>
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<td>69</td>
<td></td>
<td>Enhance the layout of documents by using formatting features.</td>
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<tr>
<td>70</td>
<td></td>
<td>Import graphics, using tools and sources.</td>
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<tr>
<td>71</td>
<td></td>
<td>Analyze writing tools.</td>
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<tr>
<td>72</td>
<td></td>
<td>Utilize advanced word processing operations.</td>
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<tr>
<td>73</td>
<td></td>
<td>Integrate a database, graphics, diagonal, and spreadsheet into a word-processed document.</td>
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<tr>
<td>74</td>
<td></td>
<td>Manipulate word-processed documents in different formats.</td>
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</table>

**Developing Electronic Spreadsheets**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Compare features of spreadsheet programs to determine the best software for an individual's or organization's needs.</th>
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<tbody>
<tr>
<td>76</td>
<td></td>
<td>Create a spreadsheet.</td>
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<tr>
<td>77</td>
<td></td>
<td>Edit a spreadsheet.</td>
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<tr>
<td>78</td>
<td></td>
<td>Enhance a spreadsheet by using formatting features and graphics.</td>
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<tr>
<td>79</td>
<td></td>
<td>Construct formulas to solve typical business-oriented problems.</td>
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<tr>
<td>80</td>
<td></td>
<td>Apply basic function commands.</td>
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<td>81</td>
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<td>Apply intermediate functions.</td>
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</table>

**Developing and Managing Databases**

| 87 |  | + + | Determine when it is appropriate to use a database. |
| 88 |  | + + | Compare the features of database programs to determine the best software for an individual's or organization's needs. |
| 89 |  | + | Plan a database file. |
| 90 |  | + + | Design a database file. |
| 91 |  | + + | Create a database file. |
| 92 |  | + + | Edit a database file. |
| 93 |  | + + | Manage databases. |
| 94 |  | + + | Index databases. |
| 95 |  | + + | Filter databases. |
| 96 |  | + + | Create queries to access information. |
| 97 |  | + + | Generate reports and forms. |
| 98 |  | + | Enhance reports, using formatting features and graphics. |
| 99 |  | + | Integrate database information into word processing and spreadsheet applications by creating links. |

**Developing Multimedia Presentations**

<p>| 100 |  | + + | Identify the components of an effective presentation. |
| 101 |  | + + | Describe output options from presentation software. |
| 102 |  | + + | Create a multimedia presentation through research and organization. |</p>
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**Communicating through Technology**

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**Preparing for Industry Certification**

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**Developing Employability Skills**
<table>
<thead>
<tr>
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Legend: ✗ Essential  ○ Non-essential  ☢ Omitted

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**Curriculum Framework**

**Exploring Computer Concepts**

**Task Number 39**

**Explain the functions of computer system components.**

**Definition**

Explanation should include the operations performed by system components such as

- processor
- memory
- input
- output
- storage
• cloud storage.

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

Introduction to Computers Click "View Course Topics" to see all lesson.

Task Number 40

Illustrate the information processing cycle.

Definition

Illustration should include the

• purpose of the cycle as it relates to computer systems
• identification of the parts of the cycle (i.e., input, processing, output, and storage)
• discussion of each part’s role in the cycle
• discussion of varying speeds of information processing.

FBLA Competitive Events and Activities Areas

Computer Problem Solving
Task Number 41

Trace the development of computing devices and their influence on society.

Definition

Tracing the development should include

- a timeline indicating milestones and major advances in computer technology
- an indication of the diversity of major contributors to computer technology (i.e., individuals, organizations, corporations)
- changes to business and personal life caused by computer technology.

Common Career Technical Core

IT6
Describe trends in emerging and evolving computer technologies and their influence on IT practices.

FBLA Competitive Events and Activities Areas

Computer Problem Solving

Help Desk

Introduction to Information Technology
Task Number 42

Demonstrate the use of computer input devices.

Definition

Demonstration should include the methods of use, the financial considerations, and the relationship to other computer system components of devices such as

- keyboard
- mouse
- scanner
- universal serial bus (USB) device
- touch screen
- stylus
- tablet
- smartphone
- voice and video input devices (e.g., microphone, webcam, headset)
- other electronic devices.

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving
Task Number 43

Describe Wi-Fi, Bluetooth, and mobile devices.

Definition

Description should include the methods of use, financial considerations, and the relationship to other computer system components of devices such as

- a wireless tablet/notebook computer
- a smartphone
- e-book readers
- game devices
- digital cameras
- digital recorders.

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk
Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

Introduction to Computers Click "View Course Topics" to see all lesson.

Task Number 44

Describe computer output devices.

Definition

Description should include methods of use, financial considerations, and the relationship to other computer system components of devices such as

- displays (e.g., desktop computer monitor, smartphone, digital camera, tablet, laptop)
- printers
- speakers
- scanners
- projectors.

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology
Task Number 45

Describe auxiliary storage devices.

Definition

Description should include the methods of use, financial considerations, and the relationship to other computer system components of devices such as

- USB devices
- external hard drives
- cloud-based storage
- memory cards.

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design
Networking Concepts

Word Processing

---

**Task Number 46**

**Identify basic networking components.**

**Definition**

Identification should include a list of the primary components needed to build an operational network, including

- server
- network interface card (NIC)
- router
- switch
- firewall
- cable (e.g., fiber, cat5)
- filter
- shared printing
- shared source software.

**Common Career Technical Core**

**IT11**

Demonstrate knowledge of the hardware components associated with information systems.

**FBLA Competitive Events and Activities Areas**

**Computer Problem Solving**

**Help Desk**

**Introduction to Information Technology**

**Network Design**

**Networking Concepts**

**Microsoft Imagine Academy Resources**
Task Number 47

Describe how the Internet works.

Definition

Description should include a general overview of the Internet’s structure and functionality, and a discussion of

- the concept of the Internet as a global network of linked computer networks
- network and telecommunication devices and components (e.g., switches, routers)
- network protocols for transmitting data (e.g., HyperText Transfer Protocol [HTTP], File Transfer Protocol [FTP], Transmission Control Protocol/Internet Protocol, [TCP/IP])
- services such as email and the Internet.

Exploring Ethical Issues Related to Computers and Computer Systems

Task Number 48

Identify security issues related to computer hardware, software, and data.

Definition

Identification should include a list of methods for preventing and consequences of dealing with the

- theft of equipment or intellectual property
- loss or corruption of data through malicious software
- unauthorized entry into the computer system and/or applications
- accidental loss or corruption of data by a user or company
- loss or theft of private company or customer information.
Common Career Technical Core

IT10
Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.

IT8
Recognize and analyze potential IT security threats to develop and maintain security requirements.

FBLA Competitive Events and Activities Areas

Business Law

Cyber Security

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Microsoft Imagine Academy Resources

[2.024] Microsoft Digital Literacy: Computer Security and Privacy—Lesson 1
Introduction to Security and Privacy

Task Number 49

Identify concepts related to copyright, public domain, copy protection, intellectual property, and licensing agreements, including, but not limited to, software, media (e.g., music, pictures), and logo requirements.

Definition

Identification should include

- a list of terms
- examples of each concept
• laws covering the protection of published information
• legal and ethical issues arising from the infringement of copyright laws and licensing agreements.

Common Career Technical Core

IT4
Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors.

FBLA Competitive Events and Activities Areas

3D Animation
American Enterprise Project
Business Law
Community Service Project
Digital Video Production
E-Business
Electronic Career Portfolio
Mobile Application Development
Partnership with Business Project
Public Service Announcement
Sales Presentation
Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Microsoft Imagine Academy Resources

Computer Ethics

Task Number 50
Identify concepts of cybersecurity and cyber forensics, honesty, and confidentiality related to information systems (e.g., spam, malicious software).

Definition

Identification should include a list of items related to

- system security (i.e., ensuring information is transmitted according to approved protocol)
- technological integrity (i.e., verifying the source of information and ensuring information on a user’s screen is the same as what was sent)
- confidentiality (i.e., ensuring through technology that information remains private and secure).

Common Career Technical Core

IT10
Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.

IT4
Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors.

IT8
Recognize and analyze potential IT security threats to develop and maintain security requirements.

FBLA Competitive Events and Activities Areas

Business Law

Cyber Security

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.
Task Number 51

Identify social networking etiquette.

Definition

Identification should include electronic courtesy (i.e., ensuring the rules of network etiquette are followed).

Task Number 52

Investigate security issues related to technology.

Definition

Investigation should include research to identify threats to computer systems (e.g., spam, malicious software, theft) and the methods for guarding against such threats, including

- malware protection software
- firewalls
- regular backups
- password protection
- data encryption
- software updates
- limiting access to devices and portable storage.

Common Career Technical Core

IT10
Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.

IT8
Recognize and analyze potential IT security threats to develop and maintain security requirements.

FBLA Competitive Events and Activities Areas

Business Law
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Microsoft Imagine Academy Resources

Protecting your Computer

Task Number 53

Investigate Internet privacy issues and computer crimes, including identity theft.

Definition

Investigation should include research to identify computer crimes and privacy issues related to Internet use, such as

- infection of a computer by malicious software
- computer hacking
- cyberstalking
- theft of computer equipment
- software piracy
- identity theft and methods to prevent or protect against each.

Common Career Technical Core
Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.

Recognize and analyze potential IT security threats to develop and maintain security requirements.

FBLA Competitive Events and Activities Areas

Business Law

Cyber Security

E-Business

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Managing Computer Systems

Task Number 54

Maintain workstation, equipment, software, and supplies.

Definition

Maintenance should include following established procedures for

- the start-up and shutdown of computers
- the care of the computer and peripherals
• the use of software, including accessing and exiting software
• the use of supplies, storage of supplies, and disposal of waste and recyclable items
• the backup of data
• the safe removal of hardware
• green computing
• preventing health risks.

Common Career Technical Core

IT-SUP2
Manage operating systems and software applications, including maintenance of upgrades, patches and service packs.

IT-SUP4
Perform installation, configuration and maintenance of operating systems.

IT-SUP7
Employ system installation and maintenance skills to setup and maintain an information system.

IT11
Demonstrate knowledge of the hardware components associated with information systems.

IT12
Compare key functions and applications of software and determine maintenance strategies for computer systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

Introduction to Computers Click "View Course Topics" to see all lesson.
Task Number 55

Identify information needed to purchase or replace computer equipment and peripherals.

Definition

Identification should include factors such as

- budget restrictions
- storage requirements
- business vs. personal usage considerations
- the need for special features (e.g., for multimedia tasks, gaming).

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

Economics and Personal Finance Standards of Learning

EPF.10
The student will develop consumer skills by

a. examining basic economic concepts and their relation to product prices and consumer spending;
b. examining the effect of supply and demand on wages and prices;
c. describing the steps in making a purchase decision, including the roles of marginal benefit and marginal cost;
d. determining the consequences of conspicuous consumption;
e. describing common types of contracts and the implications of each;
f. demonstrating comparison-shopping skills;
g. maintaining a filing system for personal financial records;
h. examining the impact of advertising and marketing on consumer demand and decision making in the global marketplace;
i. accessing reliable financial information from a variety of sources;
j. explaining consumer rights, responsibilities, remedies, and the importance of consumer vigilance; and
k. examining precautions for protecting identity and other personal information.

FBLA Competitive Events and Activities Areas

Computer Problem Solving
Task Number 56

Obtain assistance via electronic and hard-copy references and documentation.

Definition

Obtaining assistance involves searching for information using resources, including

- periodicals and journals
- books
- software "Help" menus
- Internet
- online subscription databases.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing
Task Number 57

Troubleshoot hardware problems.

Definition

Troubleshooting involves the use of established, documented procedures to resolve hardware problems, including

- power supply
- proper connections
- paper jams
- network connections
- hardware connections
- USB usage
- wireless device maintenance.

Common Career Technical Core

IT-SUP3
Apply appropriate troubleshooting techniques in resolving computer hardware, software and configuration problems.

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Task Number 58

Operate components of the user interface.
Definition

Operation includes parts of the computer screen such as

- menu
- toolbars and/or ribbons
- icons
- command buttons
- tabs
- groups
- task bar.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

[2.009] Microsoft Digital Literacy: Computer Basics—Lesson 4
Computer Operating Systems Click "View Course Topics" to see all lessons.

Task Number 59

Manage the desktop environment.

Definition

Management includes system resource maintenance methods such as

- creating and deleting shortcuts/aliases to software
- deleting temporary files
• controlling the history of the Internet browser
• controlling cookie files
• utilizing the task manager
• controlling the recycle bin.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

[2.009] Microsoft Digital Literacy: Computer Basics—Lesson 4
Click "View Course Topics" to see all lessons.

Task Number 60

Manage files and folders/directories.

Definition

Management of files/directories (in networked and stand-alone environments) should include

• creating
• renaming
• reorganizing
• expanding
• collapsing
• deleting files and folders/directories.

FBLA Competitive Events and Activities Areas
Task Number 61

Back up data files.

Definition

Backing up files includes creating a copy of files, directories, and software programs on a USB device or cloud-based/online storage.

Common Career Technical Core

IT7
Perform standard computer backup and restore procedures to protect IT information.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology
Task Number 62

Scan storage devices and equipment for malicious software.

Definition

Scanning includes utilizing antivirus utility software that locates and removes malicious software and disinfects a device.

Common Career Technical Core

IT8
Recognize and analyze potential IT security threats to develop and maintain security requirements.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Cyber Security

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Task Number 63
Describe the steps to install and remove software.

Definition

Description should detail the procedure a user or system administrator follows when installing and uninstalling software. Steps should include

- reading and agreeing to abide by software licensing contract
- following the software manufacturer’s instructions for installing or uninstalling software.

Common Career Technical Core

IT-SUP2
Manage operating systems and software applications, including maintenance of upgrades, patches and service packs.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Task Number 64

Operate peripherals.

Definition

Operation includes using the device according to manufacturer’s directions to create and save files and transmit data. Examples include

- saving a file to a USB device
• taking a digital picture to be saved as a file
• scanning a picture or a document to be saved as a file
• faxing a document
• connecting to the Internet via a network connection or wireless device.

Common Career Technical Core

IT11
Demonstrate knowledge of the hardware components associated with information systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

Computer Performance and Features Click "View Course Topics" to see all lessons.

Task Number 65

Identify safety precautions and devices associated with computer use.

Definition

Identification includes computer-related items that ensure personal and equipment safety such as

• surge protectors and uninterruptible power supply (UPS)
• anti-static mats and pads
• malware protection software
• electric cords and wiring.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

Introduction to Computers Click "View Course Topics" to see all lesson.

Producing Word Processing Documents

Task Number 66

Compare features of word processing programs to determine the best tools to use for a given task.

Definition

Comparison should include analyzing features, functions, and characteristics of software programs used for writing, editing, formatting, and printing documents. The comparison should result in the determination of the most appropriate word processing tools for the task at hand.
Common Career Technical Core

IT12
Compare key functions and applications of software and determine maintenance strategies for computer systems.

FBLA Competitive Events and Activities Areas

Computer Applications

Computer Problem Solving

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Word Processing

Microsoft Imagine Academy Resources

[2.018] Microsoft Digital Literacy: Productivity Programs—Lesson 2
Common Features and Commands

Task Number 67

Compose documents.

Definition

Composition involves using a word processing program to create, type, format, and edit documents such as

- letters
- memoranda
- reports
- tables
- blogs.

FBLA Competitive Events and Activities Areas
Task Number 68

Use word processing programs to perform desktop publishing functions.

Definition

Use involves formatting documents (e.g., to create brochures, pamphlets, flyers, business cards, newsletters, programs) with desktop publishing features and should require students to

- create columns and tables
- insert graphics, photos, and objects
- apply layout and design techniques
- manage fonts and styles.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 69

Edit documents.

Definition
Editing includes reading a document and marking and correcting errors. Possible errors include

- misspelled words
- incorrect grammar
- confusing sentence and paragraph structure
- distracting or non-industry-standard formatting.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 70

Enhance the layout of documents by using formatting features.

Definition

Enhancement involves using formatting features to improve a document. Elements that may be enhanced include

- text font and alignment
- paragraph styles
- columns and margins
- orientation
- backgrounds.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing
Task Number 71

Import graphics, using tools and sources.

Definition

Importing should include accessing files and using peripherals to save a graphic as a file that can be placed in a word processing document. Peripherals that allow the user to import graphics include

- scanners
- digital video sources
- smartphones
- tablets
- screenshot applications.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 72

Analyze writing tools.

Definition

Analysis should include

- selecting desired settings for writing tools (e.g., speller, thesaurus, grammar check)
- acknowledging suggestions made by writing tools
- determining whether to accept the suggestions.

Suggestions provided include
• spelling alternatives, suggested by the spell check dictionary
• synonyms, suggested by the thesaurus
• alternative grammatical constructions, suggested by the grammar check tool and/or online grammar tools
• readability ease and academic level of composition
• language translation.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 73

Utilize advanced word processing operations.

Definition

Utilization should include the use of merge, macro, and template features to improve the efficiency in creating

• form letters
• mailing labels
• job applications
• newsletters.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing
Task Number 74

Integrate a database, graphics, diagonal, and spreadsheet into a word-processed document.

Definition

Integration involves linking a word-processed document to a database, graphic, or spreadsheet, so that when the source file (i.e., database, graphic, diagonal, or spreadsheet) is updated, the data in the word-processed document is updated as well. Examples may include integrating

- a database of addresses to be used to create a form letter or mailing labels
- a graphic to be used as an illustration
- a spreadsheet file with a graph to be used as supporting information.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 75

Manipulate word-processed documents in different formats.

Definition

Manipulation should include saving documents using a menu command, shortcut key, or toolbar/ribbon icon to preserve the layout and content of a document in different formats, including

- PDF
- HTML
- DOC
- DOCX
- RTF.
It should also include opening documents of various formats in a word processing application.

**FBLA Competitive Events and Activities Areas**

**Computer Applications**

**Database Design & Applications**

**Spreadsheet Applications**

**Word Processing**

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**Developing Electronic Spreadsheets**

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**Task Number 76**

**Compare features of spreadsheet programs to determine the best software for an individual's or organization's needs.**

**Definition**

Comparison should include analyzing features, functions, and characteristics of popular software programs used for creating, editing, formatting, and printing spreadsheets. The comparison should result in the determination of the most appropriate spreadsheet tools for the task at hand.

**Common Career Technical Core**

**IT12**

Compare key functions and applications of software and determine maintenance strategies for computer systems.

**FBLA Competitive Events and Activities Areas**

**Computer Applications**

**Database Design & Applications**
Task Number 77

Create a spreadsheet.

Definition

Creation should include

- opening a blank spreadsheet in the software program
- formatting rows and columns of the spreadsheet
- inputting and formatting data (e.g., as text, as numbers)
- inserting a graph
- sorting and custom sorting
- printing sections of the spreadsheet
- adding custom headers and footers
- saving the file.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 78

Edit a spreadsheet.
Definition

Editing involves updating data to reflect changes or corrections to

- text
- numbers
- format
- graphs/charts.

Task Number 79

Enhance a spreadsheet by using formatting features and graphics.

Definition

Enhancements are made by using formatting features to modify elements, such as font, color, cell size, and cell border, and using graphics such as visuals or photo files to illustrate a spreadsheet. Examples of enhancements include

- creating a spreadsheet with varying format features
- using automated formatting features provided by the spreadsheet software
- incorporating visuals and photos relevant to the spreadsheet to create templates for business forms and other documents.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 80

Construct formulas to solve typical business-oriented problems.

Definition
Construction involves using features to program the software to perform calculations on data in the spreadsheet, such as

- finding averages
- adding values
- counting column and row contents
- finding greatest or least values
- finding percentages.

**Common Career Technical Core**

**BM1**
Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision-making in business.

**FBLA Competitive Events and Activities Areas**

**Computer Applications**

**Database Design & Applications**

**Spreadsheet Applications**

**Word Processing**

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**Task Number 81**

**Apply basic function commands.**

**Definition**

Application of basic spreadsheet functions (e.g., Average, MIN, MAX, SUM, IF) involves choosing preprogrammed functions to analyze data.

**FBLA Competitive Events and Activities Areas**

**Computer Applications**

**Database Design & Applications**

**Spreadsheet Applications**

**Word Processing**
Task Number 82

Apply intermediate functions.

Definition

Application of intermediate spreadsheet functions includes, but is not limited to

- relative and absolute cell addressing
- macros
- IF statements
- PMT–calculates the payment for a loan based on constant payment and a constant interest rate
- PV–returns the present value of an investment
- FV–returns the future value of an investment based on an interest rate and a constant payment schedule
- COUNT–counts the number of cells that meet the selected criteria
- COUNTIF–counts the number of cells in a range that meet the selected criteria.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 83

Analyze data.

Definition

Analysis should include reviewing and comparing data in a spreadsheet or a graph and drawing conclusions about such information as

- data from a financial report
• scheduled duration of a task from a project plan
• trends from a report showing activity over a given time span (e.g., website statistics).

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 84

Create graphs and charts (embedded or stand-alone) to represent data visually.

Definition

Creation should require use of software features that translate data into visual representations that can be embedded into an existing spreadsheet or assigned to a new worksheet. Visual representations could include

• bar charts
• pie charts
• graphs
• column charts
• 3D charts.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing
Task Number 85

Integrate word processing and database information.

Definition

Integration involves linking a spreadsheet to a word-processed document or database, so that when the source file (i.e., the document or database) is updated, the data in the spreadsheet is also updated. Examples include integrating

- a database of numerical values to be used to generate a graph
- a word-processed document containing a list of terms to be used as labels in a spreadsheet.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 86

Format graph features.

Definition

Formatting should include manipulating graph features using various methods within the graph itself. The features may include, but are not limited to,

- moving chart titles
- formatting axes titles and a legend
- changing colors within the chart
- modifying various other elements.

FBLA Competitive Events and Activities Areas

Computer Applications
Task Number 87

Determine when it is appropriate to use a database.

Definition

Determination should involve a review of the types of databases that can be used to solve business problems. Students should be directed to examine the assignment/problem to determine which software program can be used most effectively and the benefits derived from using the selected program.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Microsoft Imagine Academy Resources

[2.022] Microsoft Digital Literacy: Productivity Programs—Lesson 6
Introduction to Database Programs

Task Number 88
Compare the features of database programs to determine the best software for an individual's or organization's needs.

**Definition**

Comparison includes analyzing features, functions, and characteristics of popular database software programs that allow the user to create records and files, then sorting and querying the data. The comparison should determine the most appropriate database tools for the task at hand.

**Common Career Technical Core**

**IT12**

Compare key functions and applications of software and determine maintenance strategies for computer systems.

**FBLA Competitive Events and Activities Areas**

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

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**Task Number 89**

**Plan a database file.**

**Definition**

Planning should include examining requirements such as the

- people and systems that will use the database
- type of data (e.g., text, numbers, dates)
- amount of data
- size of data elements.

**FBLA Competitive Events and Activities Areas**

Computer Applications
Task Number 90

Design a database file.

Definition
Design should include determining how the data will be

- accessed
- entered
- manipulated
- retrieved.

Task Number 91

Create a database file.

Definition
Creation should include

- opening a new, empty file in a database program
- creating and configuring the forms, fields, and tables
- entering data
- saving the database file.

Task Number 92

Edit a database file.

Definition
Editing a database involves updating data to reflect changes or corrections to elements such as

- text (i.e., spelling)
• numbers
• format
• design.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

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Task Number 93

Manage databases.

Definition

Management is accomplished by applying an ordering system to data and should require determining the sorting option that is most helpful to the user. Options include

• ascending order (i.e., A–Z; 1, 2, 3, ...)
• descending order (i.e., Z–A; 9, 8, 7, ...).

Task Number 94

Index databases.

Definition

Indexing is accomplished by applying an order to the sorting of multiple fields and should require determining the order of sorting that is most helpful to the user.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications
Word Processing

Task Number 95

Filter databases.

Definition

Filtering is accomplished by restricting data-sheet or form records to only those that satisfy some necessary criterion.

Task Number 96

Create queries to access information.

Definition

Creation involves setting search parameters to help find specific data within a database. Methods for creating queries include using a query building tool or a query programming language (e.g., SQL). Wildcards should be used to make queries, if necessary. Queries may be run automatically or manually through the database interface or a web page.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 97

Generate reports and forms.

Definition
Generation involves creating a query to produce a formatted document that displays requested data and includes

- determining the information needed in the report
- configuring the report format in the database
- conducting the query
- printing the report
- creating forms using design view and wizards.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

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**Task Number 98**

**Enhance reports, using formatting features and graphics.**

**Definition**

Enhancements include using formatting features to modify elements such as

- font
- color
- headers
- footers
- page numbers
- table borders

and using graphics or photo files to illustrate a report.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications
Task Number 99

Integrate database information into word processing and spreadsheet applications by creating links.

Definition

Integration involves creating a link between a database and a word-processed document or a spreadsheet, so that the document or spreadsheet is updated when the records in the database are updated. Examples should include

- form letters
- mailing labels
- data tables
- directories.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Developing Multimedia Presentations

Task Number 100

Identify the components of an effective presentation.
Definition

Identification includes a list of components to consider when developing a presentation. Such components should include:

- lines of text per slide
- words per line of text
- length of presentation (i.e., number of slides)
- size, color, and placement of text and graphics
- choice of slide background
- use of slide transitions
- number and type of graphics and animations.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design

The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Task Number 101

Describe output options from presentation software.
Definition

Description should include a discussion and comparison of features, functions, and characteristics of output options, including

- slide shows
- slide handouts
- handouts with notes
- video.

Common Career Technical Core

IT12
Compare key functions and applications of software and determine maintenance strategies for computer systems.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.
Task Number 102

Create a multimedia presentation through research and organization.

Definition

Creation includes

- selecting a theme, layout, and colors for the slides
- writing, formatting, and placing text
- selecting appropriate sounds and transitions
- illustrating the slides with graphics
- supporting the information with charts and graphs.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design

The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.
Task Number 103

Edit a multimedia presentation.

Definition

Editing includes reviewing and modifying the presentation. Possible items to be edited include:

- misspelled words
- repetition and redundant language
- incorrect grammar
- undesirable formatting
- confusing slide sequence
- inappropriate or excessive graphics, animations, or transitions.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design

The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Task Number 104
Utilize options for creating, inserting, and editing objects.

Definition

Utilization includes drawing and editing objects with software tools to create or modify graphic elements that support or enhance the presentation. Objects should include

- text boxes, with or without fill color and borders
- lines of varying weights, patterns, and lengths
- shapes such as triangles, rectangles, arrows, starbursts, with or without fill color and borders
- graphically enhanced text.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Task Number 105
Enhance a multimedia presentation with specialized features.

Definition

Enhancements are made by using specialized features to increase the effectiveness of the presentation and should include planning by considering

- subject and audience when determining themes and visual effects (e.g., animation of objects, transitions between slides)
- readability of font styles and colors
- relevance of visuals and photos and their value vs. threat of distraction
- degree of support offered by charts and graphs in illustrating statistical data
- formatting of graphics and illustrations.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design

The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Task Number 106
Integrate software applications into a multimedia presentation.

Definition

Integration involves the incorporation of information entered in another software application and includes creating a

- document or spreadsheet to be inserted into a presentation
- chart or graph from spreadsheet data to be inserted into a presentation
- customized graphic
- hyperlink to an external file (i.e., on the computer, the network, or the Internet).

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation

Website Design

The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Task Number 107
Deliver an effective multimedia presentation.

Definition

Delivery should demonstrate the principles of effective communication, which include the following:

- Maintain eye contact with audience members.
- Present information that supports data on the slides without reading the slides or reading from notes.
- Synchronize the presentation to advance at the proper times.
- Use effective voice projection techniques.
- Articulate the message.
- Summarize the main points at the conclusion.

Common Career Technical Core

IT1
Demonstrate effective professional communication skills and practices that enable positive customer relationships.

FBLA Competitive Events and Activities Areas

3D Animation

American Enterprise Project

Business Law

Community Service Project

Digital Video Production

E-Business

Electronic Career Portfolio

Mobile Application Development

Partnership with Business Project

Public Service Announcement

Sales Presentation
Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Task Number 108

Critique the clarity and effectiveness of multimedia presentations.

Definition
Critique should reflect the relative success of presentations according to principles of effective presentation. Critique can include a self-evaluation and a peer/instructor-evaluation. Critique may include the use of a rubric.

FBLA Competitive Events and Activities Areas

3D Animation
American Enterprise Project
Business Law
Community Service Project
Digital Video Production
E-Business
Electronic Career Portfolio
Mobile Application Development
Partnership with Business Project
Public Service Announcement
Sales Presentation

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.
Communicating through Technology

Task Number 109

Identify new and emerging devices, methods, and channels for communicating electronically.

Definition

Identification should include latest trends in telecommunication methods and devices. Examples may include

- social networking
- social bookmarking
- blogs
- wikis
- video-sharing websites
- voice or video calls over the Internet
- texting or instant messaging
- viral marketing
- Global Positioning System (GPS)
- smartphones and applications that run on them
- video conferencing

Identification should also include the advantages, disadvantages, and short- and long-term implications of using social media or other electronic methods of communication.

Common Career Technical Core

IT6
Describe trends in emerging and evolving computer technologies and their influence on IT practices.

FBLA Competitive Events and Activities Areas

Mobile Application Development

Microsoft Imagine Academy Resources
Task Number 110

Describe networking features and concepts.

Definition

Description includes the following components and characteristics common to each type of network (e.g., peer to peer, bus, ring):

- server
- router
- network interface card (NIC)
- networking software
- shared printing
- shared software

Common Career Technical Core

IT-SUP5
Demonstrate the use of networking concepts to develop a network.

FBLA Competitive Events and Activities Areas

Network Design

Networking Concepts

Microsoft Imagine Academy Resources

[2.007] Microsoft Digital Literacy: Computer Basics—Lesson 2

Click "View Course Topics" to see all lessons.

Task Number 111

Explore uses of the Internet in business applications.

Definition
Exploration involves the use of resources such as books, periodicals, and the Internet to discover how businesses utilize the functions and services of the Internet. Examples of business applications may include

- advertising products and services on web pages
- conducting e-commerce through a website
- communicating with staff, suppliers, customers, and others via email
- collaborating through Internet resources or cloud computing
- creating, editing, and managing tasks and notes electronically for project management
- accessing a company network remotely.

**Common Career Technical Core**

**IT5**
Explain the implications of IT on business development.

**FBLA Competitive Events and Activities Areas**

**Computer Problem Solving**

**E-Business**

**Electronic Career Portfolio**

**Help Desk**

**Introduction to Information Technology**

**Network Design**

**Networking Concepts**

**Website Design**
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

**Microsoft Imagine Academy Resources**

[2.012] Microsoft Digital Literacy: Internet and the World Wide Web—Lesson 1
[The Internet] Click "View Course Topics" to see all lessons.

**Task Number 112**
Incorporate information from the Internet into a business project.

**Definition**

Incorporating information should include gathering data about a particular subject from a website and using that data to enhance the project.

**FBLA Competitive Events and Activities Areas**

- Computer Problem Solving
- E-Business
- Electronic Career Portfolio
- Help Desk
- Introduction to Information Technology
- Network Design
- Networking Concepts
- Website Design

The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

**Microsoft Imagine Academy Resources**


[The World Wide Web](#) Click "View Course Topics" to see all lessons.

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**Task Number 113**

Create a website, using web page design software.

**Definition**

Creation of a website involves the planning, design, and development of linked documents that can be viewed in an Internet browser. Web page design software includes any software application or free web-building option that allows documents to be saved in HTML format.
FBLA Competitive Events and Activities Areas

Computer Problem Solving

E-Business

Electronic Career Portfolio

Help Desk

Introduction to Information Technology

Network Design

Networking Concepts

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

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Task Number 114

Describe Internet services.

Definition

Description should include a discussion of features, functions, and characteristics of Internet services, including email, instant messaging, newsgroups, file storage, cloud-based storage, video channels, blogs, and web hosting.

FBLA Competitive Events and Activities Areas

Computer Problem Solving

E-Business

Electronic Career Portfolio

Help Desk

Introduction to Business

Introduction to Information Technology
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Microsoft Imagine Academy Resources

[2.014] Microsoft Digital Literacy: Internet and the World Wide Web—Lesson 3 Using E-Mail Click "View Course Topics" to see all lessons.

Task Number 115

Explore the applications of electronic commerce (e-commerce).

Definition

Exploration should include a discussion of methods of buying and selling products, information, and services via the Internet.

FBLA Competitive Events and Activities Areas

Computer Problem Solving

E-Business

Electronic Career Portfolio

Help Desk

Introduction to Business

Introduction to Information Technology

Network Design

Networking Concepts

Website Design
Task Number 116

Explore trends in emerging communications technology and information processing.

Definition

Exploration involves the use of sources, including books, periodicals, and the Internet, to research trends. Examples of recent trends include:

- wireless technology
- satellite communications
- voice-recognition systems
- cloud computing.

Exploration may gather information such as:

- statistics indicating the popularity of a given trend
- circumstances that led to the rise of the trend
- forecasts of the trend’s continued success
- names of companies that perpetuate the trend.

Common Career Technical Core

IT6
Describe trends in emerging and evolving computer technologies and their influence on IT practices.

FBLA Competitive Events and Activities Areas

Computer Problem Solving

E-Business

Electronic Career Portfolio
Emerging Business Issues
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Help Desk

Introduction to Business

Introduction to Information Technology

Network Design

Networking Concepts

Website Design
The topic for this event changes from year to year. The annual topic may or may not correlate with this particular course. Please refer to the current Virginia FBLA State Handbook.

Microsoft Imagine Academy Resources

[2.030] Microsoft Digital Literacy: Digital Lifestyles—Lesson 1
The Digital Experience

Preparation for Industry Certification

Task Number 117

Describe the processes and requirements for obtaining industry certifications related to the Computer Information Systems course.

Definition

Description should include a list of industry certifications related to the Computer Information Systems course and the processes/requirements for obtaining the certifications from

- the official website of the testing organization/vendor
• the materials from publishers that have developed practice materials and tests based on information from the testing organization/vendor
• information from certified instructors or industry-certified professionals
• information in the “Introduction/Course Description” section of this course.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

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Task Number 118

Identify testing skills/strategies for certification examination.

Definition

Identification of testing skills and strategies should be undertaken by

• conducting an Internet research project
• reviewing materials from exam and practice-exam publishers
• interviewing certified instructors and/or industry-certified professionals.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

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Task Number 119
Demonstrate the ability to successfully complete selected practice examinations.

Definition

Demonstration should include obtaining and successfully completing practice examinations for selected certifications related to the course obtained from vendor sites and/or materials from publishers. The level of performance on a practice examination serves as a gauge of the applicant's readiness for formal industry testing.

FBLA Competitive Events and Activities Areas

Computer Applications

Database Design & Applications

Spreadsheet Applications

Word Processing

Task Number 120

Complete an industry certification examination representative of skills learned in this course.

Definition

Completion of an industry certification examination will be achieved when the student applicant earns an examination score deemed "passing" by the testing organization. Qualifying examinations are those currently approved at the state level as representative of Computer Information Systems skills.

Students should be encouraged to attain industry certification as evidence of their computer application skill level and general employability.

Common Career Technical Core

BM3
Explore, develop and apply strategies for ensuring a successful business career.

FBLA Competitive Events and Activities Areas
Developing Employability Skills

Task Number 121

Research career opportunities in computer information systems.

Definition

Research should yield the careers available in the computer information systems field and should include the preparation and aptitude required for each, opportunities for advancement, and employment trends in the field. The career search should include using job databanks and matching an individual’s abilities, aptitudes, and job expectations with industry standards.

FBLA Competitive Events and Activities Areas

Electronic Career Portfolio

Job Interview

Task Number 122

Develop a résumé.

Definition
Development should include

- educational background
- work history
- certifications
- honors and awards
- membership in club and/or community activities, leadership positions held, and community service.

Students should understand how to convert a résumé that was created in a word processing application into an appropriate format so it can be posted to the Internet or placed into an employer’s résumé bank on a company website. Students should be encouraged to keep a résumé current and updated to reflect experience and education, even if they are not currently involved in a job search.

**Common Career Technical Core**

**BM3**
Explore, develop and apply strategies for ensuring a successful business career.

**FBLA Competitive Events and Activities Areas**

**Electronic Career Portfolio**

**Future Business Leader**

**Job Interview**

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**Task Number 123**

**Compose a letter of application or cover letter.**

**Definition**

Composition should include

- appropriate business letter format
- three or four short paragraphs emphasizing salient points in the résumé
- indication that the applicant knows something about the company
- contributions the applicant can make to the company
- indication of whether the job search is confidential and why the applicant is a good fit for the position.
Task Number 124

Complete a manual or electronic application form.

Definition

Completion should include complete, accurate, and effectively organized information. It should follow additional criteria specifically related to the electronic transmittal of such information (for example, attention to security concerns, inclusion of keywords to enhance interest in the application, use of scanner-friendly format).

Common Career Technical Core

BM3
Explore, develop and apply strategies for ensuring a successful business career.

FBLA Competitive Events and Activities Areas

Electronic Career Portfolio
Future Business Leader
Job Interview

Task Number 125

Create a professional portfolio.
**Definition**

Creation should include a résumé and a combination of electronic and non-electronic documents representative of the student’s qualifications. Selected documents should reflect the student’s knowledge, skills, and abilities.

**Common Career Technical Core**

**BM3**
Explore, develop and apply strategies for ensuring a successful business career.

**FBLA Competitive Events and Activities Areas**

**Electronic Career Portfolio**

**Job Interview**

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**Task Number 126**

**Participate in a mock interview.**

**Definition**

Participation should give students the opportunity to practice interviewing skills before an actual interview. Students should play a variety of roles in the interview to illustrate behaviors both desirable (e.g., maintaining eye contact, asking informed questions, dressing professionally) and undesirable (e.g., speaking too softly, failing to answer questions completely, using electronic devices during the interview, wearing excessive jewelry or cologne/perfume).

**Common Career Technical Core**

**BM3**
Explore, develop and apply strategies for ensuring a successful business career.

**IT1**
Demonstrate effective professional communication skills and practices that enable positive customer relationships.

**FBLA Competitive Events and Activities Areas**

**Electronic Career Portfolio**

**Future Business Leader**
Task Number 127

Compose an interview follow-up communication.

Definition

Composition should include

- the appropriate business format
- appreciation for the interview as a business courtesy
- the date and time the interview was conducted
- a reminder to the interviewer of the applicant’s qualifications
- reiteration of an important point or topic discussed during the interview
- a confirmation of the applicant’s interest in the job
- a request for further action (e.g., a second interview or meeting).

Common Career Technical Core

BM3
Explore, develop and apply strategies for ensuring a successful business career.

FBLA Competitive Events and Activities Areas

Electronic Career Portfolio

Future Business Leader

Job Interview

Task Number 128

Identify the criteria for evaluating self-performance.

Definition

Identification may include rating specific aspects of job performance such as

- quality of work (as it relates to the technical aspects of the job)
• achievement of specific targets or goals
• administrative aspects of the job
  o budgeting
  o compliance with company procedures
  o submission of expense and/or other reports in a complete and timely manner
  o efficient use of resources
• personal development plan
• communication
  o keeping supervisors informed
  o interacting in a positive manner with customers, supervisors, and team members
  o listening to and positively reacting to constructive feedback from supervisors
• identification of aspects of the position's expectations that could be cause for withdrawal from the application process.

FBLA Competitive Events and Activities Areas

Electronic Career Portfolio

Future Business Leader

Job Interview

Task Number 129

Identify the steps to follow in resigning from a position.

Definition

Identification could include

• an oral or written resignation from the job
• a provision of ample time to find a replacement—usually two weeks
• an offer to train the replacement
• an indication of what was gained or learned from the experience.

FBLA Competitive Events and Activities Areas

Electronic Career Portfolio

Job Interview
Task Number 130

Identify potential employment barriers for nontraditional groups and ways to overcome the barriers.

Definition

Identification could include

- gender
- ethnicity
- age
- inadequate education
- the lack of required skills, including communication skills
- discrimination in hiring or promoting.

Ways to overcome the barriers could include

- scholarships
- job training programs
- mentorships
- minority assistance programs
- public speaking or communications courses.

Common Career Technical Core

BM3
Explore, develop and apply strategies for ensuring a successful business career.

FBLA Competitive Events and Activities Areas

Electronic Career Portfolio

Job Interview

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SOL Correlation by Task

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<th>English</th>
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<td>40</td>
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<td>9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5</td>
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<td>No.</td>
<td>Task Description</td>
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</tr>
<tr>
<td>42</td>
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<td>43</td>
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<tr>
<td>44</td>
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<td>9.5, 10.5, 11.5, 12.5</td>
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<td>9.5, 10.5, 11.5, 12.5</td>
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<tr>
<td>47</td>
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<td>9.5, 10.5, 11.5, 12.5</td>
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<td>48</td>
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<td>9.5, 10.5, 11.5, 12.5</td>
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<tr>
<td>49</td>
<td>Identify concepts related to copyright, public domain, copy protection, intellectual property, and licensing agreements, including, but not limited to, software, media (e.g., music, pictures), and logo requirements.</td>
<td>9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6</td>
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<td>50</td>
<td>Identify concepts of cybersecurity and cyber forensics, honesty, and confidentiality related to information systems (e.g., spam, malicious software).</td>
<td>9.5, 10.5, 11.5, 12.5</td>
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<tr>
<td>51</td>
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<td>9.5, 10.5, 11.5, 12.5</td>
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<td>52</td>
<td>Investigate security issues related to technology.</td>
<td>9.5, 10.5, 11.5, 12.5</td>
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<td>53</td>
<td>Investigate Internet privacy issues and computer crimes, including identity theft.</td>
<td>9.8, 10.8, 11.8, 12.8</td>
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<tr>
<td>54</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td></td>
<td>Task Description</td>
<td>English:</td>
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</tr>
<tr>
<td>55</td>
<td>Identify information needed to purchase or replace computer equipment and peripherals.</td>
<td>9.5, 10.5, 11.5, 12.5</td>
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<tr>
<td>56</td>
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<td>57</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<td>58</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>59</td>
<td>Manage the desktop environment.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>60</td>
<td>Manage files and folders/directories.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>61</td>
<td>Back up data files.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>62</td>
<td>Scan storage devices and equipment for malicious software.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>63</td>
<td>Describe the steps to install and remove software.</td>
<td>9.2, 9.5, 10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
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<tr>
<td>64</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>65</td>
<td>Identify safety precautions and devices associated with computer use.</td>
<td>9.5, 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>66</td>
<td>Compare features of word processing programs to determine the best tools to use for a given task.</td>
<td>9.5, 10.5, 11.5, 12.5</td>
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<tr>
<td>67</td>
<td>Compose documents.</td>
<td>9.6, 9.7, 10.6, 10.7, 11.6, 11.7, 12.6, 12.7</td>
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<tr>
<td>68</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>69</td>
<td>Edit documents.</td>
<td>9.7, 10.7, 11.7, 12.7</td>
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<tr>
<td>70</td>
<td>Enhance the layout of documents by using formatting features.</td>
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<tr>
<td>71</td>
<td>Import graphics, using tools and sources.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>72</td>
<td>Analyze writing tools.</td>
<td>9.6, 9.7, 10.6, 10.7, 11.6, 11.7, 12.6, 12.7</td>
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<tr>
<td>73</td>
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<td>74</td>
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<td>Manipulate word-processed documents in different formats.</td>
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<td>76</td>
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<td>77</td>
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<tr>
<td>79</td>
<td>Enhance a spreadsheet by using formatting features and graphics.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>80</td>
<td>Construct formulas to solve typical business-oriented problems.</td>
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<td>83</td>
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<td>9.2, 9.5, 10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
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<tr>
<td>84</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<td>85</td>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
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<td>9.2, 10.2, 11.2, 12.2</td>
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<tr>
<td>87</td>
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<td>88</td>
<td>Compare the features of database programs to determine the best software for an individual's or organization's needs.</td>
<td>9.5, 10.5, 11.5, 12.5</td>
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<td>89</td>
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<td>91</td>
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<tr>
<td>92</td>
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<td>95</td>
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<tr>
<td>96</td>
<td>Create queries to access information.</td>
<td>9.2, 10.2, 11.2, 12.2</td>
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<td>97</td>
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<tr>
<td></td>
<td>Description</td>
<td>Mathematics: COM.10, COM.11, COM.12</td>
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<td>English: 9.2, 10.2, 11.2, 12.2</td>
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<td>100</td>
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<td>English: 9.5, 10.5, 11.5, 12.5</td>
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<tr>
<td>101</td>
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<tr>
<td>102</td>
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<td>English: 9.1, 9.2, 9.5, 9.6, 9.7, 10.1, 10.2, 10.5, 10.6, 10.7, 11.1, 11.2, 11.5, 11.6, 11.7, 12.1, 12.2, 12.5, 12.6, 12.7</td>
</tr>
<tr>
<td>103</td>
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<tr>
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<tr>
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<tr>
<td>112</td>
<td>Incorporate information from the Internet into a business project.</td>
<td>English: 9.2, 10.2, 11.2, 12.2</td>
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| 114 | Describe Internet services. | English: 9.2, 9.5, 10.2, 10.5, 11.2, 11.5, 12.2, 12.5  
History and Social Science: GOVT.12, VUS.14, WG.17, WHII.14 |
| 115 | Explore the applications of electronic commerce (e-commerce). | English: 9.1, 9.8, 10.1, 10.8, 11.1, 11.8, 12.1, 12.8  
History and Social Science: GOVT.9, GOVT.12, GOVT.14, GOVT.15, VUS.14, WG.17, WHII.14 |
| 116 | Explore trends in emerging communications technology and information processing. | English: 9.5, 9.8, 10.5, 10.8, 11.5, 11.8, 12.5, 12.8  
History and Social Science: GOVT.12, VUS.13, VUS.14, WG.17, WHII.14 |
| 117 | Describe the processes and requirements for obtaining industry certifications related to the Computer Information Systems course. | English: 9.2, 9.5, 10.2, 10.5, 11.2, 11.5, 12.2, 12.5  
History and Social Science: GOVT.8 |
| 118 | Identify testing skills/strategies for certification examination. | English: 9.5, 10.5, 11.5, 12.5 |
| 119 | Demonstrate the ability to successfully complete selected practice examinations. | English: 9.5, 10.5, 11.5, 12.5 |
| 120 | Complete an industry certification examination representative of skills learned in this course. | English: 9.5, 10.5, 11.5, 12.5  
History and Social Science: GOVT.8 |
| 121 | Research career opportunities in computer information systems. | English: 9.8, 10.8, 11.8, 12.8  
History and Social Science: GOVT.8 |
| 122 | Develop a résumé. | English: 9.6, 9.7, 10.6, 10.7, 11.6, 11.7, 12.6, 12.7 |
| 123 | Compose a letter of application or cover letter. | English: 9.6, 9.7, 10.6, 10.7, 11.6, 11.7, 12.6, 12.7 |
| 124 | Complete a manual or electronic application form. | English: 9.2, 9.5, 9.6, 9.7, 10.2, 10.5, 10.6, 10.7, 11.2, 11.5, 11.6, 11.7, 12.2, 12.5, 12.6, 12.7 |
| 125 | Create a professional portfolio. |
| 126 | Participate in a mock interview. | English: 9.1, 10.1, 11.1, 12.1 |
| 127 | Compose an interview follow-up communication. | English: 9.6, 9.7, 10.6, 10.7, 11.6, 11.7, 12.6, 12.7 |
| 128 | Identify the criteria for evaluating self-performance. | English: 9.5, 10.5, 11.5, 12.5 |
| 129 | Identify the steps to follow in resigning from a position. | English: 9.5, 10.5, 11.5, 12.5 |
| 130 | Identify potential employment barriers for nontraditional groups and ways to overcome the barriers. | English: 9.5, 10.5, 11.5, 12.5 |
|  | History and Social Science: GOVT.16, VUS.13, VUS.14, WG.17, WHII.14 |

**Teacher Resources**

**Instructional Scenarios**

The following instructional scenarios provide classroom activities to support the major concepts included in Computer Information Systems and Computer Information Systems, Advanced.

- **Connecting with Those Who Came Before: Trace the Development of Computers and Devices and Their Influence on Society**
  Duty/Concept Area(s): 39-46/Exploring Computer Concepts
  Creating a Letter Using Merged Fields from a Spreadsheet
  Duty/Concept Area(s): 39-45/Using Advanced Word Processing Functions
- **To Expand or Not to Expand?**
  Duty/Concept Area(s): 45-56/Using Advanced Spreadsheet Functions
- **Database Project**
  Duty/Concept Area(s): 57-61/Using Advanced Database Functions
- **Getting Ready for the Workforce**
  Duty/Concept Area(s): 64-73/Producing Word Processing Documents
- **Producing Distribution Materials: Create Documents and Graphics for Use in Various Advanced Desktop Publishing Products**
  Duty/Concept Area(s): 74-85/Producing Desktop Published Documents for Print
- **Telecommunication Blog**
  Duty/Concept Area(s): 103-111/Communicating through Technology

**Cyber Security and Cyber Forensics Infusion Units**
Cyber Security and Cyber Forensics Infusion Units (CYBR) were designed to be infused with designated CTE courses to help students in those programs achieve additional, focused, validated tasks/competencies in personal and professional cyber security skills. These units are not mandatory, and, as such, the tasks/competencies are marked as "optional," to be taught at the instructor's discretion.

**Entrepreneurship Infusion Units**

Entrepreneurship Infusion Units may be used to help students achieve additional, focused competencies and enhance the validated tasks/competencies related to identifying and starting a new business venture. Because the unit is a complement to certain designated courses and is not mandatory, all tasks/competencies are marked “optional.”

**Microsoft Imagine Academy Resources**

Microsoft Imagine Academy (MSIA) offers classroom resources and materials and instructional techniques that will help enhance instruction and learning for this course. Using the school’s membership ID and product key for the Microsoft Imagine Academy, all resources are available through the MSIA Member Dashboard on the Microsoft site.

- To access the curriculum resources, select the Classroom Tile from the member site.
- To access downloadable curriculum resources including the MOAC e-Book, Lesson Plans, and Study Guides select Curriculum Overview - Curriculum Downloads.
- To access Online Learning videos and tutorials select Online Learning Directory tile.
- For more information visit: How to Get Started with Microsoft Imagine Academy Program.
## Appendix: Credentials, Course Sequences, and Career Cluster Information

### Industry Credentials: Only apply to 36-week courses

- Administrative Assisting Assessment
- Administrative Services Assessment
- Cloud Essentials Certification Examination
- College and Work Readiness Assessment (CWRA+)
- College Level Examination Program (CLEP): Information Systems and Computer Applications
- General Management Assessment
- Human Resources Management Assessment
- IC3 Digital Literacy Certification Examination
- Interactive Media Assessment
- Microsoft 365 Fundamentals Examination
- Microsoft Certified Azure Fundamentals Examination
- Microsoft Dynamics 365 Fundamentals Examination
- Microsoft Office Specialist (MOS) Examinations
- National Career Readiness Certificate Assessment
- Workplace Readiness Skills for the Commonwealth Examination

### Concentration sequences: A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.

<table>
<thead>
<tr>
<th>Course Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting (6320/36 weeks)</td>
</tr>
<tr>
<td>Accounting, Advanced (6321/36 weeks)</td>
</tr>
<tr>
<td>Business Law (6131/36 weeks)</td>
</tr>
<tr>
<td>Business Law (6132/18 weeks)</td>
</tr>
<tr>
<td>Business Management (6135/36 weeks)</td>
</tr>
<tr>
<td>Business Management (6136/18 weeks)</td>
</tr>
<tr>
<td>Computer Information Systems, Advanced (6615/18 weeks)</td>
</tr>
<tr>
<td>Computer Information Systems, Advanced (6613/36 weeks)</td>
</tr>
<tr>
<td>Computer Network Software Operations (6650/36 weeks)</td>
</tr>
<tr>
<td>Computer Network Software Operations, Advanced (6651/36 weeks)</td>
</tr>
<tr>
<td>Cybersecurity Software Operations (6304/36 weeks)</td>
</tr>
<tr>
<td>Database Design and Management (Oracle) (6660/36 weeks)</td>
</tr>
<tr>
<td>Design, Multimedia, and Web Technologies (6632/18 weeks)</td>
</tr>
<tr>
<td>Design, Multimedia, and Web Technologies (6630/36 weeks)</td>
</tr>
<tr>
<td>Design, Multimedia, and Web Technologies, Advanced (6633/18 weeks)</td>
</tr>
<tr>
<td>Design, Multimedia, and Web Technologies, Advanced (6631/36 weeks)</td>
</tr>
<tr>
<td>Digital Applications (6611/36 weeks)</td>
</tr>
<tr>
<td>Digital Applications (6617/18 weeks)</td>
</tr>
<tr>
<td>Entrepreneurship (9093/36 weeks)</td>
</tr>
<tr>
<td>Entrepreneurship, Advanced (9094/36 weeks)</td>
</tr>
<tr>
<td>Information Technology Fundamentals (6670/36 weeks)</td>
</tr>
</tbody>
</table>
- International Baccalaureate Business Management (IB6135/36 weeks)
- International Baccalaureate Information Technology in a Global Society (IB6613/36 weeks)
- Java Programming (Oracle) (6661/36 weeks)
- Legal Administration (6735/36 weeks)
- Legal Administration (6736/18 weeks)
- Medical Administration (6731/18 weeks)
- Medical Administration (6730/36 weeks)
- Office Administration (6622/18 weeks)
- Office Administration (6621/36 weeks)
- Office Specialist I--Preparation (6740/36 weeks)
- Office Specialist II--Preparation (6741/36 weeks)
- Office Specialist III--Preparation (6742/36 weeks)
- Principles of Business and Marketing (6116/18 weeks)
- Principles of Business and Marketing (6115/36 weeks)
- Programming (6640/36 weeks)
- Programming, Advanced (6641/36 weeks)

### Career Cluster: Arts, Audio/Video Technology and Communications

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio and Video Technology and Film</td>
<td>Audio and Video Equipment Technician</td>
</tr>
<tr>
<td></td>
<td>Audio-Video Designer, Engineer</td>
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<tr>
<td>Journalism and Broadcasting</td>
<td>Art Director</td>
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<tr>
<td></td>
<td>Broadcast Technician</td>
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<tr>
<td></td>
<td>Editor</td>
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<tr>
<td></td>
<td>Program Director</td>
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<tr>
<td></td>
<td>Radio, TV Announcer</td>
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<tr>
<td></td>
<td>Radio, TV Reporter</td>
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<tr>
<td>Performing Arts</td>
<td>Cinematographer</td>
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<tr>
<td></td>
<td>Costume Designer</td>
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<tr>
<td></td>
<td>Lighting Designer</td>
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<tr>
<td></td>
<td>Technical Director</td>
</tr>
<tr>
<td></td>
<td>Video, Film Editor</td>
</tr>
<tr>
<td>Printing Technology</td>
<td>Desktop Publisher</td>
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<tr>
<td></td>
<td>Job Printer</td>
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<tr>
<td></td>
<td>Prepress Technician</td>
</tr>
<tr>
<td></td>
<td>Press Operator</td>
</tr>
<tr>
<td></td>
<td>Production, Planning, Expediting Clerk</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>Network Systems and Data Communication Analyst</td>
</tr>
</tbody>
</table>

### Career Cluster: Business Management and Administration

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Support</td>
<td>Administrative Assistant</td>
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<tr>
<td></td>
<td>Court Reporter</td>
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<tr>
<td></td>
<td>Dispatcher</td>
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</tbody>
</table>
### Career Cluster: Business Management and Administration

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
</table>
| **Business Information Management** | Executive Assistant  
Medical Transcriptionist  
Office Manager |
| **General Management** | Administrative Assistant  
Budget Analyst  
Communications Equipment Operator  
Desktop Publisher  
Executive Assistant  
Office Manager |
| **Operations Management** | Entrepreneur  
General Manager  
Meeting and Convention Planner  
Office Manager  
Purchasing Manager |

### Career Cluster: Information Technology

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
</table>
| **Information Support and Services** | Account Executive  
Computer Support Specialist  
Customer Service Representative  
Instructional Coordinator  
Technical Writer |
| **Network Systems** | Computer and Information Systems Administrator  
Computer Software Engineer  
Computer Support Specialist  
Database Analyst  
Network Systems and Data Communication Analyst  
Telecommunications Specialist |

### Career Cluster: Marketing

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
</table>
| **Marketing Management** | Advertising and Promotions Manager  
Art Director  
Brand Manager  
Chief Executive Officer  
Entrepreneur |
### Career Cluster: Marketing

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Franchisee</td>
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<tr>
<td></td>
<td>General Manager</td>
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<tr>
<td></td>
<td>Internet Entrepreneur</td>
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<tr>
<td></td>
<td>Marketing Communication Manager</td>
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<tr>
<td></td>
<td>Marketing Manager</td>
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<tr>
<td></td>
<td>Media Planner, Buyer</td>
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<tr>
<td></td>
<td>Multimedia Artist, Animator</td>
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<tr>
<td></td>
<td>Public Information Director</td>
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<tr>
<td></td>
<td>Public Relations Manager</td>
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<tr>
<td></td>
<td>Retail Manager</td>
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<tr>
<td></td>
<td>Shipping and Receiving Clerk</td>
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</tbody>
</table>

### Career Cluster: Science, Technology, Engineering and Mathematics

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering and Technology</td>
<td>Computer Hardware Engineer</td>
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<tr>
<td></td>
<td>Computer Programmer</td>
</tr>
<tr>
<td></td>
<td>Computer Software Engineer</td>
</tr>
<tr>
<td></td>
<td>Network and Computer Systems Administrator</td>
</tr>
<tr>
<td></td>
<td>Network Systems and Data Communication Analyst</td>
</tr>
<tr>
<td></td>
<td>Production, Planning, Expediting Clerk</td>
</tr>
<tr>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td></td>
<td>Stockroom, Warehouse, or Storage Yard Stock Clerk</td>
</tr>
<tr>
<td></td>
<td>Technical Writer</td>
</tr>
<tr>
<td></td>
<td>Telecommunications Specialist</td>
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<tr>
<td></td>
<td>Transportation Manager</td>
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</tbody>
</table>

### Career Cluster: Transportation, Distribution and Logistics

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health, Safety and Environmental Management</td>
<td>Health, Safety, and Environment Manager</td>
</tr>
<tr>
<td>Sales and Service</td>
<td>Billing Clerk</td>
</tr>
<tr>
<td></td>
<td>Customer Service Representative (CSR)</td>
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<tr>
<td></td>
<td>Dispatcher</td>
</tr>
<tr>
<td></td>
<td>Office Manager</td>
</tr>
<tr>
<td></td>
<td>Parts Salesperson</td>
</tr>
<tr>
<td></td>
<td>Statement Clerk</td>
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</table>